## Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.      (Currently Amended)  A brake pressure estimating apparatus for an automotive vehicle, comprising:

a brake system including a master cylinder which develops a hydraulic in response to at least a brake manipulation as a hydraulic source and a brake pressure controlling section that is enabled to arbitrarily control a brake pressure of each wheel cylinder;

a first wheel cylinder brake liquid pressure estimating section that estimates a first brake liquid pressure of the wheel cylinder of each of road wheels on the basis of a model of the brake pressure controlling section for each of control periods;

a second wheel cylinder brake liquid pressure estimating section that estimates a second brake liquid pressure of the wheel cylinder for each road wheel on the basis of a vehicular model with a vehicular characteristic using a signal indicative of a road wheel acceleration as an element of ~~the~~ a vehicular ~~model~~ state for each control period; and

a master cylinder liquid pressure estimating section that estimates a liquid pressure of the master cylinder for each control period on the basis of the first and second brake liquid pressure estimated values of the wheel cylinder of each road wheel estimated by the first wheel cylinder liquid pressure estimating section and the second wheel cylinder brake liquid pressure estimating section, the first wheel brake cylinder liquid pressure estimating section calculates the first brake liquid pressure of the wheel cylinder of each road wheel on the basis of the master cylinder liquid pressure estimated value estimated at a previous control period and the first liquid pressure estimated value estimated at the previous control period, the second wheel cylinder brake liquid pressure estimating section including a vehicular motion state detecting section that detects a vehicular motion state and calculating the second wheel cylinder brake liquid pressure for each road wheel from the detected vehicular motion state, and the master cylinder liquid pressure estimating section outputting the master cylinder liquid pressure estimated value to make a difference between the first wheel cylinder brake

liquid pressure estimated value and the second wheel cylinder brake liquid pressure estimated value small to the first wheel cylinder brake liquid pressure estimating section to cause the master cylinder liquid pressure estimated value to be converged into a true value thereof.

2.    (Original)  A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 1, wherein the vehicular motion state detecting section equipped in the second wheel cylinder brake liquid pressure estimating section includes a detecting section to detect a wheel velocity variation rate of one of the wheels which is a controlled object and the master cylinder liquid pressure estimating section makes the first brake liquid pressure estimated value approach to the second brake liquid pressure to make the difference between the first brake liquid pressure estimated value and the second brake liquid pressure estimated value small to converge the master cylinder estimated liquid pressure into the true value thereof.

3.    (Previously Presented)  A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 1, wherein the second liquid pressure estimating section comprises: a maximum brake liquid pressure calculating section that calculates a maximum brake liquid pressure $P_{B\_MAX}$ by which each road wheel is enabled to be braked at maximum on the basis of a braking liquid pressure $P_{STAT}$ under a static wheel load and a wheel load movement due to a vehicular braking or vehicular turning; a braking liquid pressure variation rate calculating section that calculates a braking liquid pressure variation rate $P_{BDEF}$ caused by a road wheel moment by multiplying the corresponding vehicular road wheel acceleration $\dot{V}w$ detected by a wheel velocity detecting section with a predetermined coefficient $K_{VW}$ related to a vehicular inertia moment; a determination coefficient calculating section that calculates a determination coefficient $P_{B\_ROAD\_RETIO}$ to determine whether a driven wheel is under a pressure increase state or under a pressure decrease state as follows: $P_{B\_ROAD\_RETIO} = P_{B\_ROAD\_RETIO} + INCN(w/c) \cdot K_{INC} - DECN(w/c) \cdot K_{DEC}$, wherein $P_{B\_ROAD\_RETIO}$ at a right side term of the above equation denotes $P_{B\_ROAD\_RETIO}$ at the previous control period, INCN (w/c) denotes a pressure increase pulse duration, DECN(w/c) denotes a pressure decrease pulse duration, $K_{INC}$ denotes a coefficient to convert the pressure increase

pulse duration INCN to a hydraulic pressure, and $K_{DEC}$ denotes a coefficient to convert the pressure decrease pulse duration DECN to the hydraulic pressure; an each road wheel cylinder brake liquid pressure calculating section that calculates each road wheel braking liquid pressure $P_{B\_ROAD}$ as follows: $P_{B\_ROAD} = (P_{B\_ROAD\_RETIO}/\sum(P_{B\_ROAD\_RETIO})) \cdot X_G \cdot K_{PB}$, wherein $X_G$ denotes a longitudinal acceleration of the vehicle and $K_{PB}$ denotes a coefficient determined as a vehicular weight and vehicular road wheel brake pad frictional coefficient $\mu$; and a second brake liquid pressure estimated value outputting section that calculates and outputs the wheel cylinder liquid pressure estimated value for each road wheel $P^{\wedge}_{WC}$ as follows: $P^{\wedge}_{WC} = \min(P_{B\_ROAD}, P_{B\_MAX}) + P_{BDF}$.

4.    (Original) A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 3, wherein the first wheel cylinder brake liquid pressure estimating section comprises: a pump increase determining section that determines whether a hydraulic pump pressure increase occurs in the model of the pressure controlling section; a wheel cylinder inflow quantity calculating section that calculates a wheel cylinder inflow quantity $Q_{IN}$, when the hydraulic pump pressure increase occurs, as follows: $Q_{IN} = K_{PUMP} \cdot INCN(G/V)$, wherein INCN(G/V) denotes a pressure increase pulse duration and $K_{PUMP}$ denotes a pump capability coefficient; a wheel cylinder outflow quantity calculating section that calculates a wheel cylinder outflow quantity $Q_{OUT}$ from a pressure decrease pulse duration DECN(G/V) and a difference in pressure between the master cylinder liquid pressure estimated value $P^{\wedge}_{MC}$ and the first brake liquid pressure $P^{\wedge}_{B}$ at the previous control period multiplied with a cut valve capability coefficient $K_{CUT}$, when the hydraulic pump pressure increase occurs; a wheel cylinder variation quantity calculating section that calculates a wheel cylinder variation quantity per unit time $dQb/dt$ from the wheel cylinder inflow quantity $Q_{IN}$ and the wheel cylinder outflow quantity $Q_{OUT}$; a wheel cylinder liquid quantity calculating section that calculates an integration of the calculated wheel cylinder variation quantity $dQb/dt$ with respect to time to derive a wheel cylinder liquid quantity $Qb$; and a first brake liquid pressure outputting section that calculates and outputs the first brake liquid pressure $P^{\wedge}_{B}$ as follows: $P^{\wedge}_{B} = \int (Qb)$.

5.      (Original)  A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 3, wherein the first brake liquid pressure estimating section comprises: a pump increase determining section that determines whether a hydraulic pump pressure increase occurs in the model of the pressure controlling section; a wheel cylinder inflow quantity calculating section that calculates a wheel cylinder inflow quantity $Q_{IN}$ when the hydraulic pump pressure increase does not occur as follows: $Q_{IN} = K_{IN} (P\hat{}_{MC} - P\hat{}_B) \cdot$ INCN(w/c), wherein INCN(w/c) denotes a pulse duration time of a corresponding wheel cylinder IN valve, $K_{IN}$ denotes a predetermined IN valve predetermined coefficient, $P\hat{}_{MC}$ denotes the master cylinder liquid pressure estimated value at the previous control period, and $P\hat{}_B$ denotes the first wheel cylinder liquid pressure estimated value estimated at the previous control period; a wheel cylinder outflow quantity calculating section that calculates a wheel cylinder outflow quantity $Q_{OUT}$ from a pulse duration time of the corresponding wheel cylinder OUT valve DECN(w/c) and the first wheel cylinder brake liquid pressure estimated value $P\hat{}_B$ at the previous control period multiplied with an OUT valve predetermined coefficient $K_{OUT}$, when the hydraulic pump pressure increase does not occur; a wheel cylinder variation quantity calculating section that calculates a wheel cylinder variation quantity per unit time dQb/dt from the wheel cylinder inflow quantity $Q_{IN}$ and the wheel cylinder outflow quantity $Q_{OUT}$; a wheel cylinder liquid quantity calculating section that calculates an integration of the calculated wheel cylinder variation quantity dQb/dt with respect to time to derive a wheel cylinder liquid quantity Qb; and a first brake liquid pressure outputting section that calculates and outputs the first brake liquid pressure estimated value $P\hat{}_B$ as follows: $P\hat{}_B = \int (Qb)$.

6.      (Original)  A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 4, wherein the master cylinder liquid pressure estimating section comprises: a wheel cylinder brake liquid pressure error calculating section that calculates an error between the first and second wheel cylinder brake pressure estimated values as follows: $P_{B\_ERROR} = P\hat{}_{WC} - P\hat{}_B$; a four–wheel total error calculating section that calculates a total of each error of the four wheels $P_{B\_ERROR\_T}$ as follows: $P_{B\_ERROR\_T} = (P_{B\_ERROR\_FL} + P_{B\_ERROR\_FR}) \times K_{ERROR\_F} + (P_{B\_ERROR\_RL} + P_{B\_ERROR\_RR}) \times K_{ERROR\_R}$, wherein $K_{ERROR\_F}$ denotes a front wheel error gain and $K_{ERROR\_R}$ denotes a rear wheel error gain and $K_{ERROR\_F} > K_{ERROR\_R}$; an

anti-lock brake control execution determining section that determines whether the anti-lock brake control is being executed and the second wheel cylinder brake liquid pressure estimated value $P\hat{}_{WC}$ is larger than the first wheel cylinder brake liquid pressure estimated value $P\hat{}_B$ and a brake control target value $P^*_B$; a master cylinder liquid pressure estimated value lower limit value setting section that sets a lower limit value of the master cylinder liquid pressure estimated value $P_{B\_LIM\_MIN}$ to a maximum value of the estimated values for the second brake liquid pressures $MAX(P\hat{}_{WC\_FL}, P\hat{}_{WC\_FR}, P\hat{}_{WC\_RL}, P\hat{}_{WC\_RR})$ to determine whether a sudden brake has occurred when the anti-lock brake control is being executed and the second wheel cylinder liquid pressure estimated value $P\hat{}_{WC}$ is larger than the first wheel cylinder brake liquid pressure estimated value $P\hat{}_B$ and the brake control target value $P^*_B$; a brake release determining section that determines whether the anti-lock brake control is being executed and $X_G > K_{XG} \cdot (\sum P\hat{}_B) \cdot GAIN_{PB}$ to determine whether the brake manipulation is released, wherein $X_G$ denotes a detected value of the longitudinal acceleration of the vehicle, $K_{XG}$ denotes a coefficient dependent upon a vehicular weight and a brake pad frictional coefficient $\mu$, $GAIN_{PB}$ denotes a predetermined liquid pressure gain, and $\sum P\hat{}_B$ denotes the total of the first wheel cylinder brake liquid pressure estimated value for each road wheel; and a master cylinder liquid pressure estimated value maximum value setting section that sets a maximum value $P_{B\_LIM\_MAX}$ of the master cylinder liquid pressure estimated value from each road wheel second brake liquid pressure estimated value $P\hat{}_{WC\_FL}$. $P\hat{}_{WC\_FR}, P\hat{}_{WC\_RL}$, and $P\hat{}_{WC\_RR}$ when the anti-lock brake control is being executed and $X_G > K_{XG} \cdot (\sum P\hat{}_B) \cdot GAIN_{PB}$ ; and a master cylinder liquid pressure estimated value adjusting section that controls and adjusts the total error $P_{B\_ERROR\_T}$ to make the second wheel cylinder brake liquid pressure estimated value $P\hat{}_{WC}$ equal to the first wheel cylinder brake liquid pressure estimated value $P\hat{}_B$.

7.    (Original) A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 6, wherein $P_{B\_LIM\_MIN} = 0$ when the anti-lock brake control is not being executed or the second wheel cylinder liquid pressure estimated value $P\hat{}_{WC}$ is not larger than the first wheel cylinder brake liquid pressure estimated value $P\hat{}_B$ nor the brake control target value $P^*_B$.

8.    (Original)  A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 6, wherein $P_{B\_LIM\_MAX} = P_{MCMAX}$, wherein $P_{MCMAX}$ denotes a maximum pressure up to which the master cylinder is enabled to be developed when the anti-lock brake control is not being executed or $X_G \le K_{XG} \cdot (\sum P\hat{}_B) \cdot GAIN_{PB}$.

9.    (Original)  A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 6, wherein the master cylinder liquid pressure estimated value adjusting section carries out the following proportional-and-integration control to adjust the master cylinder liquid pressure estimated value:

$P\hat{}_{MC}$ = limit $(K_{P\_PMC} \cdot P_{B\_ERROR\_T} + K_{I\_PMC} \cdot \int P_{B\_ERROR\_T} dt, P_{B\_LIM\_MAX}, P_{B\_LIM\_MIN})$, wherein $K_{P\_PMC}$ denotes a proportional gain of the proportional-and-integration control and $K_{I\_PMC}$ denotes an integration gain of the proportional-and-integration control.

10.    (Original)  A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 3, wherein the maximum brake liquid pressure calculating section calculates the maximum brake liquid pressure $P_{B\_MAX}$ for four road wheels of the vehicle as follows: $P_{BMAX\_FL} = P_{STAT\_F} - K_X \cdot X_G + K_Y \cdot Y_G$; $P_{BMAX\_FR} = P_{STAT\_F} - K_X \cdot X_G - K_Y \cdot Y_G$; $P_{BMAX\_RL} = P_{STAT\_R} + K_X \cdot X_G + K_Y \cdot Y_G$; and $P_{BMAX\_RR} = P_{STAT\_R} + K_X \cdot X_G - K_Y \cdot Y_G$, wherein $X_G$ denotes a detected value of the longitudinal acceleration of the vehicle, FL denotes a front left road wheel, FR denotes a front right road wheel, RL denotes a rear left road wheel, and RR denotes a rear right road wheel, F denotes a front road wheel side and R denotes a rear road wheel side, $K_X$ denotes a hydraulic pressure conversion coefficient for the longitudinal acceleration, $Y_G$ denotes a detected value of a lateral acceleration, and $K_Y$ denotes a hydraulic pressure conversion coefficient for the lateral acceleration.

11.    (Original)  A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 4, wherein $Q_{OUT} = K_{CUT}(P\hat{}_B - P\hat{}_{MC}) \cdot DECN(G/V)$ when the hydraulic pump pressure increase occurs and $Q_{OUT} = K_{OUT} \cdot P\hat{}_B \cdot DECN(w/c)$ when a master cylinder pressure increase occurs but the hydraulic pump pressure increase does not occur.

12.     (Original)  A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 11, wherein $Q_{IN} = K_{IN} \cdot (P\hat{}_{MC} - P\hat{}_B) \cdot INCN(w/c)$ when the master cylinder pressure increase occurs but the hydraulic pump pressure increase does not occur.

13.     (Original)  A brake pressure estimating apparatus for an automotive vehicle as claimed in claim  4, wherein $dQb/dt = Q_{IN} - Q_{OUT}$.

14.     (Currently Amended)  A brake pressure estimating method for an automotive vehicle, the automotive vehicle comprising: a brake system including a brake liquid pressure generator which develops a brake liquid pressure at each wheel cylinder of a road wheel and a brake pressure controlling section that is enabled to arbitrarily control a brake pressure of each wheel cylinder, the brake pressure estimating method comprising:

estimating a first brake liquid pressure of the wheel cylinder of each road wheel on the basis of a model of the brake pressure controlling section for each control period;

estimating a second brake liquid pressure of the wheel cylinder for each of road wheels on the basis of a vehicular model <u>with a vehicular characteristic</u> using a signal indicative of a road wheel acceleration as an element of [[the]] <u>a</u> vehicular ~~model~~ <u>state</u> for each of control periods; and

estimating a liquid pressure of the brake liquid pressure generator for each control period on the basis of the first and second brake liquid pressure estimated values of the wheel cylinder of each road wheel, at the first wheel cylinder liquid pressure estimating, calculating the first brake liquid pressure of the wheel cylinder of each road wheel on the basis of a brake pressure generator estimated value estimated at a previous control period and the first brake liquid pressure estimated value estimated at the previous control period, at the second wheel cylinder brake liquid pressure estimating, detecting a vehicular <u>motion</u> state and calculating the second wheel cylinder brake liquid pressure for each road wheel from the detected vehicular motion state, and, at the brake liquid pressure generator estimating, outputting the brake liquid pressure generator estimated value to make a difference between the first wheel cylinder brake liquid pressure estimated value and the second wheel cylinder brake liquid pressure estimated value small to cause the brake liquid pressure generator estimated value to be converged into a true value thereof.

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15.     (Currently Amended)  A brake pressure estimating apparatus for an automotive vehicle, comprising:

a brake system comprising

a brake liquid pressure generator which develops a brake liquid pressure at each wheel cylinder of a road wheel, and

a brake pressure controlling section configured to arbitrarily control the brake pressure of each wheel cylinder;

a brake liquid pressure estimating section comprising

a first brake liquid pressure estimating section that estimates a first brake liquid pressure of the wheel cylinder ($P\hat{}_{WC}$) on the basis of a brake pressure controlling model,

a second brake liquid pressure estimating section that estimates a second brake liquid pressure of the wheel cylinder ($P_B$) on the basis of a vehicular model having a vehicular characteristic that uses a signal indicative of a road wheel acceleration as an element of a vehicular state, and

a third brake liquid pressure estimating section that estimates a third brake liquid pressure of a brake generator ($P\hat{}_{MC}$) on the basis of the first and the second brake liquid pressure of the wheel cylinder ($P\hat{}_{WC}$, $P_B$), wherein the brake pressure estimating section estimates the third brake liquid pressure of the brake generator ($P\hat{}_{MC}$) regardless of whether the brake pressure controlling section is executed.


16.     (Currently Amended)  A brake pressure estimating apparatus for an automotive vehicle, comprising:

a brake system comprising

a brake liquid pressure generator which develops a brake liquid pressure at each wheel cylinder of a road wheel, and

a brake pressure controlling section configured to arbitrarily control the brake pressure of each wheel cylinder;

a brake liquid pressure estimating section comprising

a first brake liquid pressure estimating section that estimates a first brake liquid pressure of the wheel cylinder ($P\hat{}_{WC}$) on the basis of a model of a brake pressure controlling model,

a second brake liquid pressure estimating section that estimates a second brake liquid pressure of the wheel cylinder ($P_B$) on the basis of a vehicular model <u>having a vehicular characteristic that uses a signal indicative of a road wheel acceleration as an element of a vehicular state</u>, and

a third brake liquid pressure estimating section that estimates a third brake liquid pressure of a brake generator ($P\hat{}_{MC}$) on the basis of the first and the second brake liquid pressure of the wheel cylinder ($P\hat{}_{WC}$, $P_B$), wherein the brake liquid pressure estimating section estimates the third brake liquid pressure of a master cylinder ($P\hat{}_{MC}$) even without manipulation of a brake pedal.

17.    (Previously Presented)  A brake pressure estimating apparatus as claimed in claim 15, wherein a value of the road wheel acceleration ($\dot{Vw}$) is inputted to the vehicular model.

18.    (Previously Presented)  A brake pressure estimating apparatus far an automotive vehicle as claimed in claim 17, wherein the brake liquid pressure estimating section estimates the second brake liquid pressure ($P_B$) of the wheel cylinder on the basis of the value of the road wheel acceleration ($\dot{Vw}$).

19.    (Previously Presented)  A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 18, wherein the third brake liquid pressure estimating section makes a difference the first brake liquid pressure of the wheel cylinder ($P\hat{}_{WC}$) and the second brake liquid pressure of the wheel cylinder ($P_B$) small to converge the third brake liquid pressure ($P\hat{}_{MC}$) into a true value thereof.

20.    (Currently Amended)  A brake pressure estimating apparatus for an automotive vehicle, comprising:

a brake system comprising

a brake liquid pressure generator which develops a brake liquid pressure at front road wheel side and rear road wheel side wheel cylinders of four road wheels, and

a brake pressure controlling sections that is enabled to arbitrarily control the brake pressure of each wheel cylinder;

a brake liquid pressure estimating section comprising

a first brake liquid pressure estimating section that estimates a first front road side and rear road side brake liquid pressure of the respective front road side and rear road side wheel cylinders ($P^\wedge_{WC}$) on the basis of a model of the brake pressure controlling model,

a second brake liquid pressure estimating section that estimates a second front road side and rear road side brake liquid pressure of the respective front road side and rear road side wheel cylinders ($P_B$) on the basis of a vehicular model <u>with a vehicular characteristic that uses a signal indicative of a road wheel acceleration as an element of a vehicular state</u>, and

a third brake liquid pressure estimating section that includes a front road side gain and a rear road side gain, whose value is smaller than that of the front road side gain and estimates a third brake liquid pressure of a brake generator ($P^\wedge_{MC}$) on the basis of the first and the second brake liquid pressure of the respective front road side and rear road side wheel cylinders ($P^\wedge_{WC}$, $P_B$) using the front road side gain and the rear road side gain.

21.     (Previously Presented) A brake pressure estimating apparatus for an automotive vehicle, comprising:

a brake system comprising

a brake liquid pressure generator which develops a brake liquid pressure at each wheel cylinder of a road wheel, and

a brake pressure controlling section configured to arbitrarily control the brake pressure of each wheel cylinder;

a brake liquid pressure estimating section comprising

a sudden brake determination section that determines whether a sudden brake occurs,

a first brake liquid pressure estimating section that estimates a first brake liquid pressure of the wheel cylinder ($P_{WC}$) on the basis of a brake pressure controlling model,

a second brake liquid pressure estimating section that estimates a second brake liquid pressure of the wheel cylinder ($P_B$) on the basis of a vehicular model, and

a third brake liquid pressure estimating section that estimates a third brake liquid pressure of a brake generator ($\hat{P}_{MC}$) on the basis of the first and the second brake liquid pressure, wherein the third liquid pressure estimating section sets the lower limit value of the third brake liquid pressure as a maximum value of the first brake liquid pressure of the wheel cylinder ($\hat{P}_{WC}$, $P_B$) when the sudden brake is determined.

22.    (Previously Presented)  A brake pressure estimating apparatus for an automotive vehicle, comprising:

a brake system comprising

a brake liquid pressure generator which develops a brake liquid pressure at each wheel cylinder of a road wheel, and

a brake pressure controlling section that is enabled to arbitrarily control the brake pressure of each wheel cylinder;

a brake liquid pressure estimating section comprising

a brake release determination section that determines whether a brake release occurs,

a first brake liquid pressure estimating section that estimates a first brake liquid pressure of the wheel cylinder ($\hat{P}_{WC}$) on the basis of a brake pressure controlling model,

a second brake liquid pressure estimating section that estimates a second brake liquid pressure of the wheel cylinder ($P_B$) on the basis of a vehicular model, and

a third brake liquid pressure estimating section that estimates a third brake liquid pressure of a brake generator ($\hat{P}_{MC}$) on the basis of the first and the second brake liquid pressure, wherein the third liquid pressure estimating section sets the upper limit value of the third brake liquid pressure as a maximum value of the first brake liquid pressure of the wheel cylinder ($\hat{P}_{WC}$, $P_B$) when the brake release is determined.

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23.    (Previously Presented)  A brake pressure estimating apparatus as claimed in claim 16, wherein a value of the road wheel acceleration ($\dot{V}w$) is inputted to the vehicular model.

24.    (Previously Presented)  A brake pressure estimating apparatus for an automotive vehicle as claimed in claim 23, wherein the brake liquid pressure estimating section estimates the second brake liquid pressure ($P_B$) of the wheel cylinder on the basis of value of the road wheel acceleration ($\dot{V}w$).

25.    (Currently Amended)  The brake pressure estimating apparatus for an automotive vehicle as claimed in claim 1, wherein <u>said second wheel cylinder brake liquid estimating section is configured such that</u> the signal indicative of a <u>the</u> road wheel status acceleration is used, in the second wheel cylinder brake liquid pressure estimating section, in a separately calculated factor of the vehicular model.

26.    (Currently Amended)  The brake pressure estimating method for an automotive vehicle as claimed in claim 14, wherein, in the step of estimating the second brake liquid pressure, the signal indicative of a <u>the</u> road wheel status <u>acceleration</u> is used in a separately calculated factor of the vehicular model.